

AMENDMENT UNDER 37 C.F.R. §1.111
USSN: 10/014,516

REMARKS

Claims 1-17 are all the claims pending in the application. Claims 7, 8, and 13-17 have been withdrawn from consideration responsive to a previously issued restriction requirement. Claims 2, 3, 5, 6, 10, and 12 have been amended. It is believed and intended that no new matter is added by this amendment. Reconsideration and allowance of all claims are respectfully requested in view of the following remarks.

Claim Rejections - 35 U.S.C. § 112

The Examiner rejected Claims 2, 5, 10, and 12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner rejected Claims 2 and 5 for being vague and indefinite for reciting “the web is wound around the core under the low tension is longer if the core is longer and shorter if the core is shorter”, expressing confusion as to whether this language refers to the length of the web or the length of the core. The Applicant respectfully traverses this rejection, noting that the Examiner has quoted a partial phrase and that the portion of his quotation starting with “is longer” actually modifies the “given length” subject located earlier in the phrase and which was not quoted. Thus the true meaning of the phrase is that the “given length...is longer if the core is longer and shorter if the core is shorter.”

The Examiner also rejected Claims 10 and 12 for being vague and indefinite, claiming that he found it unclear whether the plurality of webs referenced in the “preamble” to Claims 10 and 12 are the same as the single webs in Claims 9 and 11 or some other, additional webs. Claims 10 and 12 have been amended to more clearly to claim the subject matter of the present invention.

Dependent claims 2, 3, 5, 6, 10, and 12 have been amended to more clearly reference the corresponding independent claims.

The Present Invention

The present invention comprises a method and apparatus 10 for winding an elongate film or sheet of paper ("web") 24a, 24b neatly around a core 28a, 28b. The web 24a, 24b is initially wound around the core 28a, 28b under a low tension, thereafter being wound under a tension that increases at a given rate, and then being wound under a tension that progressively decreases from the high tension. The web 24a, 24b thus wound into a roll is not damaged and the roll is in a neatly wound state free of edge undulations or irregularities on its end faces. (Page 42, line 21 through page 43, line 1.)

Claim Rejections - 35 U.S.C. § 102(b)

The Examiner rejected Claims 1-2, 4-5, 9, and 11 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,238,084, issued December 9, 1980 to Hiroshi Kataoka (hereafter referenced as '084).

'084 discloses a control method adapted to wind a sheet under an ideal tensile taper (col. 1, lines 10-12). The winding is started from a radius at winding initiation, R_{\min} , and the tension is gradually reduced down to a radius at winding termination, R_{\max} (col. 1, lines 66-69, Fig. 1). '084 does not disclose winding the web to a given length around the core under a low tension, progressively increasing the tension until reaching a high tension, and thereafter winding the web under a tension which is being reduced from the high tension, as claimed in the present application. In fact, '084 does not even discuss the tension as anything but "decreasing". Although '084 Fig. 1 does disclose both concave and convex curves of the tension plotted as a function of increasing radius of the roll, the tension is never shown to rise above the initial value T_0 in the figures or the specification of '084, and the character of the Fig. 1 curves merely reflects the exponential nature of the reduction in tension. Therefore, '084 does not anticipate Claims 1-2, 4-5, 9, and 11 of the present invention.

The Examiner also rejected Claims 1-2 and 4-5 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,480,799, issued November 6, 1984 to Kiyoshi Yano et al. (hereafter referenced as '799).

'799 discloses a tension control apparatus for controlling tension applied to an electric wire being wound around a winding bobbin to form a perfect layer coil (col. 1, lines 10-14). The winding machine of '799 differs greatly from the present invention because the present invention is operative to control tension on a web which covers substantially the entire surface of the core on each core rotation. In contrast, '799 is intended to produce a spiral coil of wire to evenly cover the surface of the winding bobbin over time using multiple rotations of the bobbin; the wire has to "travel" longitudinally farther from the wire origin to get to the edges of the bobbin than to get to the middle of the bobbin due to the angle from the wire origin to different lateral points on the bobbin. This longitudinal distance difference will integrally effect tension of the wire and is a complicating factor which does not effect the present invention and renders '799 somewhat nonanalogous to the present application.

Additionally, '799 does not disclose winding the web to a given length around the core under a low tension, progressively increasing the tension until reaching a high tension, and thereafter winding the web under a tension which is being reduced from the high tension, as claimed in the present application. Instead, the tension of '799 can *increase* as the wire is wound about the bobbin and may increase at least to the level of the previous high tension, as indicated in Fig. 8. Though the Examiner characterized Fig. 8 of '799 as showing "winding a web under a tension which is being reduced from the high tension", Fig. 8 *also* shows winding a web under a tension which is equal to or increasing to the high tension which, as explained in the text, maintains the tension substantially *constant* for fabricating a coil of rectangular cross-section (col. 11, lines 14-22). Indeed, an object of '799 is to provide a tension control apparatus which is capable of controlling the tension to be constant, regardless of the rotating speed of the bobbin, so '799 actually teaches away from the present invention (col. 2, lines 56-62). Therefore, '799 does not anticipate Claims 1-2 and 4-5 under 35 U.S.C. § 102(b).

Claims 2 and 5 respectively depend upon Claims 1 and 4, and thus are patentable for the reasons set forth above based on their dependency, as well as the recitations set forth therein.

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Claim Rejections - 35 U.S.C. § 103(a)

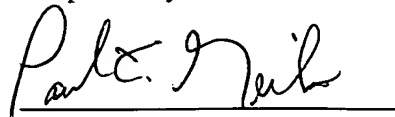
The Examiner rejected each of Claims 3, 6, 10, and 12 as being unpatentable over one of either '084 or '799 as combined with an alleged similar device. Each of those claims depends upon one of Claims 1, 4, and 9, all of which are believed to be allowable over the art of record. As noted above, the Examiner's attempted rejections using '084 and '799 are deficient. Furthermore, the Examiner's invocation of a "typical winding web for this type of device" does not teach or suggest anything that would make up for the above-noted deficiencies. The lack of combination of '084 or '799 with a specific reference and the use instead of a supposed design choice also seems to be the product of hindsight with knowledge of the present invention. Therefore, this rejection is believed to be in error and should be withdrawn.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: July 11, 2003